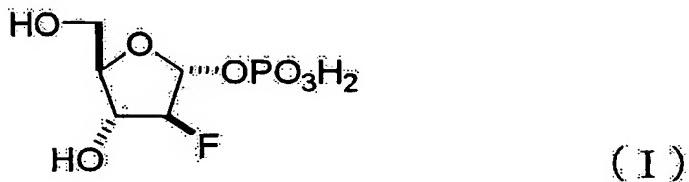


Claims

1. α -1-Phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (I):

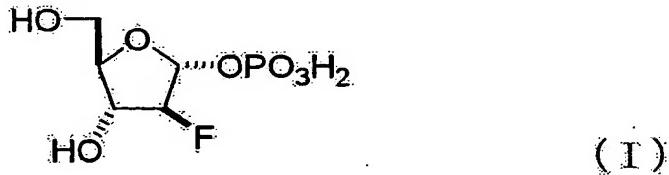
[F1]



or a salt thereof.

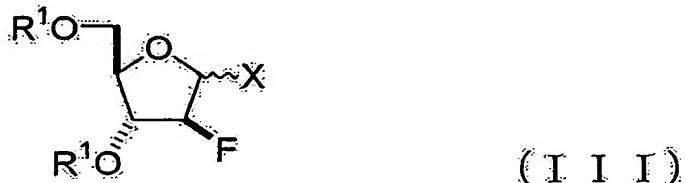
2. A method for stereoselectively producing α -1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (I):

[F5]



which method comprises hydrolyzing a 2-deoxy-2-fluoroarabinose derivative represented by formula (III):

[F2]



(wherein R¹ represents a hydroxyl-protective group, and X

represents a leaving group), thereby stereoselectively yielding an α -1-hydroxyl isomer represented by formula (IV):
[F3]



(wherein R¹ has the same meaning as defined above); phosphorylating the compound of formula (IV), thereby forming an α -1-phosphorylated-2-deoxy-2-fluoroarabinoside derivative represented by formula (V):

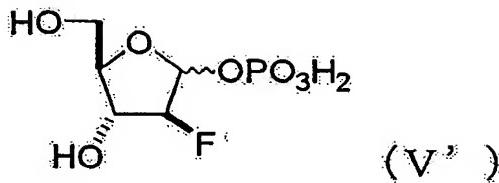
[F4]



(wherein R¹ has the same meaning as defined above, and R² represents a hydrogen atom or a phosphate-protective group); and subsequently removing the hydroxyl-protective group(s) and/or the phosphate-protective group(s).

3. A method for producing a mixture of α - and β -isomers of 1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (V'):

[F8]



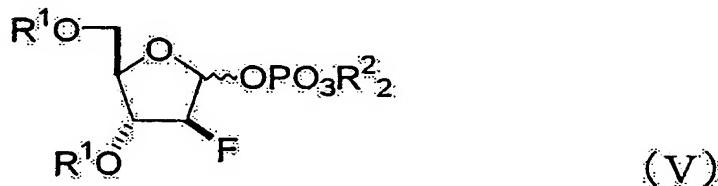
which method comprises phosphorylating, in the presence of a strong acid salt, a 2-deoxy-2-fluoroarabinose derivative represented by formula (III):

[F6]



(wherein R¹ represents a hydroxyl-protective group, and X represents a leaving group), thereby yielding a mixture of α- and β-isomers of a 1-phosphorylated-2-deoxy-2-fluoroarabinoside derivative represented by formula (V):

[F7]



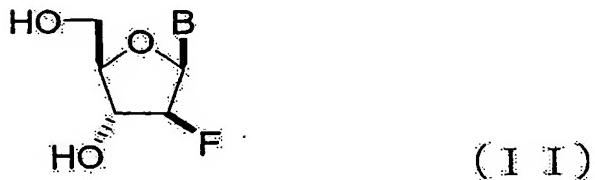
(wherein R¹ has the same meaning as defined above, and R² represents a hydrogen atom or a phosphate-protective group); and subsequently removing the hydroxyl-protective group(s) and/or the phosphate-protective group(s).

4. A production method according to claim 3, wherein the strong acid salt employed generates a halide ion or a

nitrate ion.

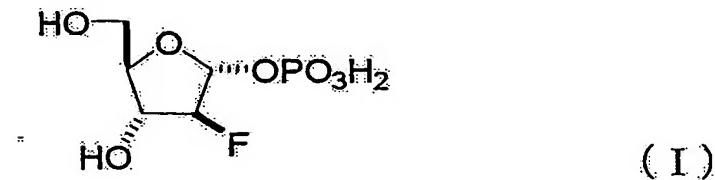
5. A method for producing 2'-deoxy-2'-fluoro- β -D-arabinonucleoside represented by formula (II):

[F11]



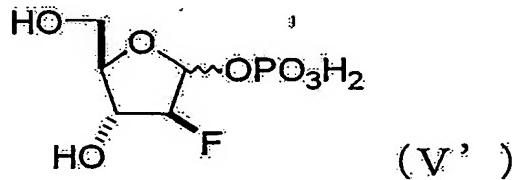
(wherein B represents a base), which method comprises causing a nucleoside phosphorylase to act on α -1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (I):

[F9]



or a mixture of α - and β -isomers of 1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (V'):

[F10]



and on a base.

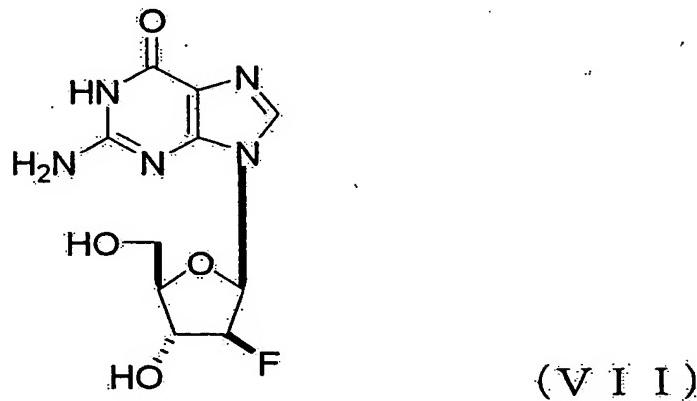
6. A production method according to claim 5, wherein the base is a purine base, or a purine base having a substituent selected from among a halogen atom, an alkyl

group, a haloalkyl group, an alkenyl group, a haloalkenyl group, an alkynyl group, an amino group, an alkylamino group, a hydroxyl group, a hydroxyamino group, an aminoxy group, an alkoxy group, a mercapto group, an alkylmercapto group, an aryl group, an aryloxy group, and a cyano group.

7. A production method according to claim 5 or 6, wherein the nucleoside phosphorylase is purine nucleoside phosphorylase.

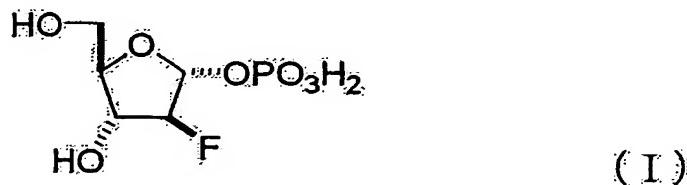
8. A method for producing 9-(2-fluoro- β -D-arabinosyl)guanine represented by formula (VII):

[F15]



which method comprises causing a nucleoside phosphorylase to act on α -1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (I):

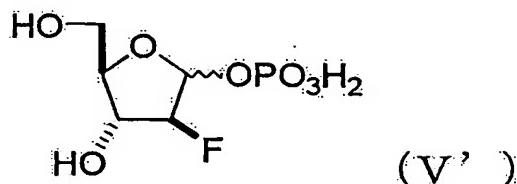
[F12]



or a mixture of α - and β -isomers of 1-phosphorylated-2-deoxy-

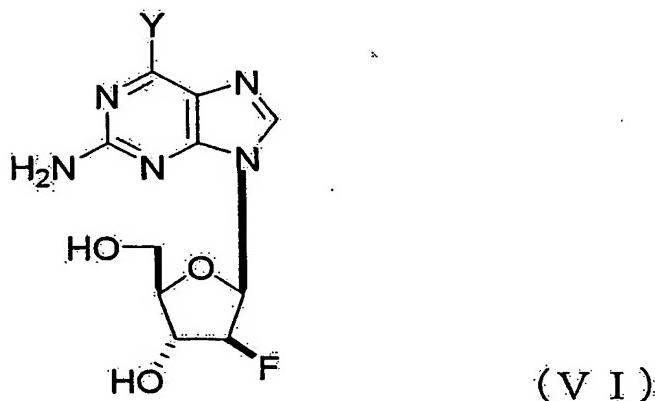
2-fluoroarabinoside represented by formula (V'):

[F13]



and on a 2-amino-6-substituted purine, thereby yielding 2-amino-6-substituted-9-(2-fluoro- β -D-arabinosyl)purine represented by formula (VI):

[F14]



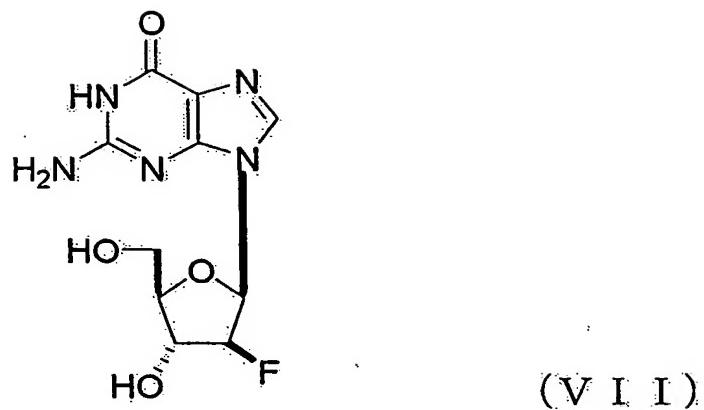
(wherein Y represents a substituent); and treating the thus-obtained purine nucleoside with a hydrolase.

9. A production method according to claim 8, wherein the 2-amino-6-substituted-purine is 2,6-diaminopurine.

10. A production method according to claim 8 or 9, wherein the hydrolase is deaminase.

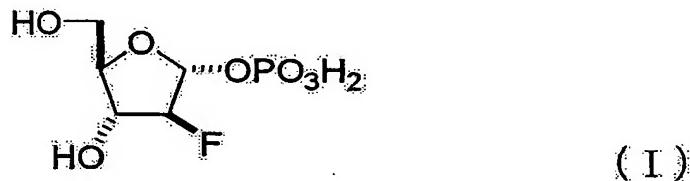
11. A method for producing 9-(2-fluoro- β -D-arabinosyl)guanine represented by formula (VII):

[F18]



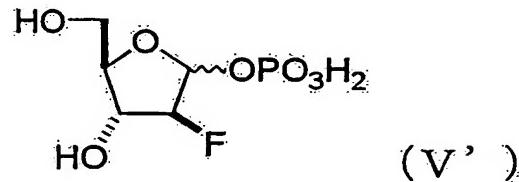
which method comprises causing a nucleoside phosphorylase and a nucleosidase to act on α -1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (I):

[F16]



or a mixture of α - and β -isomers of 1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (V'):

[F17]



and on guanosine 5'-monophosphate.

12. A production method according to claim 11, wherein the nucleoside phosphorylase is purine nucleoside phosphorylase.

13. A production method according to claim 11 or 12, wherein the nucleosidase is inosinate nucleosidase.